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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,872	08/27/2003	David M. Avery	PHB 34,372A	4908

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EXAMINER

SHIMIZU, MATSUICHIRO

ART UNIT PAPER NUMBER

2612

DATE MAILED: 11/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/648,872	Applicant(s) AVERY, DAVID M.	
	Examiner Matsuichiro Shimizu	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

The examiner acknowledges currently amended claims 11, 19, 23 and 27.

The examiner withdraws the second paragraph of 35 U.S.C. 112 rejection to claim 23 in view of currently amended claim 23 provided by the applicant filed on 8/2/06.

Response to Arguments

Applicant's arguments filed on 8/2/06 have been fully considered and examiner's response is provided as follows:

Regarding applicant's argument (line 19, page 7 to line 11, page 8) that Hughes does not disclose interrogator station sends the wake-up signal to the receiver, and rebroadcasts to the transponder, the examiner maintains that

eventhough Hughes does not specify how wake-up signals are sent to the receivers, there are only two possibilities. That is, Hughes discloses that computer 4 is sending wake-up signal to locating receivers 10 via central transmitter 8 or to locating receivers 10 via location processor 8 (Figs. 1 and 12b). Furthermore, one skilled in the art recognizes these two possibilities provide same wake-up signals to receivers 10. Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to include interrogating station sends wake-up signal to locating receiver in the device of Hughes because one skilled in the art recognizes such two possibilities provide same wake-up signals to receivers 10. Likewise, Interrogator rebroadcasts the inquiry signal to transponder (Fig. 1, central transmitter 6 or interrogator to transponder 14 with the purpose of location). The examiner acknowledges interrogator is the central transmitter 6, and not computer 4.

Regarding applicant's argument (line 23, page 8 to line 3, page 9) that Hughes in view of Shober does not disclose interrogator station sends the

wake-up signal to the receiver, and rebroadcasts to the transponder, and interrogation station in communication with the plurality of radio units.

the examiner maintains that

eventhough Hughes does not specify how wake-up signals are sent to the receivers, there are only two possibilities. That is, Hughes discloses that computer 4 is sending wake-up signal to locating receivers 10 via central transmitter 8 or to locating receivers 10 via location processor 8 (Figs. 1 and 12b). Furthermore, one skilled in the art recognizes these two possibilities provide same wake-up signals to receivers 10. Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to include interrogating station sends wake-up signal to locating receiver in the device of Hughes because one skilled in the art recognizes such two possibilities provide same wake-up signals to receivers 10. Likewise, Hughes discloses interrogation station (Fig. 1, central transmitter 6) in communication with the plurality of radio units (Fig. 1, radio units or locating receivers 10).

Regarding applicant's argument (lines 9-14, page 9) that Hughes in view of Shober does not disclose interrogator station sends the wake-up signal to the receiver, and rebroadcasts to the transponder, and interrogation station in communication with the plurality of radio units.

the examiner maintains that

eventhough Hughes does not specify how wake-up signals are sent to the receivers, there are only two possibilities. That is, Hughes discloses that computer 4 is sending wake-up signal to locating receivers 10 via central transmitter 8 or to locating receivers 10 via location processor 8 (Figs. 1 and 12b). Furthermore, one skilled in the art recognizes these two possibilities provide same wake-up signals to receivers 10. Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to include interrogating station sends wake-up signal to locating receiver in the device of Hughes because one skilled in the art recognizes such two possibilities provide same wake-up signals to receivers 10. Likewise, Hughes

discloses interrogation station (Fig. 1, central transmitter 6) in communication with the plurality of radio units (Fig. 1, radio units or locating receivers 10).

Regarding applicant's argument (lines 21, page 9 to line 3, page 10) that Hughes in view of Shober does not disclose interrogator station sends the wake-up signal to the receiver, and rebroadcasts to the transponder, and interrogation station in communication with the plurality of radio units.

the examiner maintains that

eventhough Hughes does not specify how wake-up signals are sent to the receivers, there are only two possibilities. That is, Hughes discloses that computer 4 is sending wake-up signal to locating receivers 10 via central transmitter 8 or to locating receivers 10 via location processor 8 (Figs. 1 and 12b). Furthermore, one skilled in the art recognizes these two possibilities provide same wake-up signals to receivers 10. Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to include interrogating station sends wake-up signal to locating receiver in the device of Hughes because one skilled in the art recognizes such two possibilities provide same wake-up signals to receivers 10. Likewise, Hughes discloses interrogation station (Fig. 1, central transmitter 6) in communication with the plurality of radio units (Fig. 1, radio units or locating receivers 10).

Regarding applicant's argument (lines 10-13, page 10) that Hughes in view of Shober does not disclose interrogator station sends the wake-up signal to the receiver, and rebroadcasts to the transponder, and interrogation station in communication with the plurality of radio units.

the examiner maintains that

eventhough Hughes does not specify how wake-up signals are sent to the receivers, there are only two possibilities. That is, Hughes discloses that computer 4 is sending wake-up signal to locating receivers 10 via central transmitter 8 or to locating receivers 10 via location processor 8 (Figs. 1 and 12b). Furthermore, one skilled in the art recognizes these two possibilities provide same wake-up signals to receivers 10. Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to

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include interrogating station sends wake-up signal to locating receiver in the device of Hughes because one skilled in the art recognizes such two possibilities provide same wake-up signals to receivers 10. Likewise, Hughes discloses interrogation station (Fig. 1, central transmitter 6) in communication with the plurality of radio units (Fig. 1, radio units or locating receivers 10).

Therefore, rejection of claims 11–28 follows:

Drawings

The drawings are objected to because

(1) Blocks in

Fig. 1 (12),

Fig. 2 (14T,14R,38,22,20,12,36,42,24,26,28,30,32),

Fig. 3 (62,56,58,60),

Fig. 4 (88,76,78,84) and

Fig. 5 (100,92,94,96,98,102,104,106,108,110,112,114) need labeling.

(2) Heading for each of drawing Figs. 1–5 needs be included.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes

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are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections – 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11–12, 16–18, 19–20 and 24–26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hughes et al. (5,920,261).

Regarding claims 11 and 19, Hughes teaches a radio system, comprising:

a plurality of spatially separate radio units

(Fig. 1, col.10, lines 18–29, locating receivers 10 with identifications wherein a central station can locate the transponding station via triangulation of these identified locating receivers 10) identifiable by a set of radio unit identifications;

a **central transmitter** (Fig. 1, a central transmitter 6) or interrogating station in communication with the plurality of radio units (Fig. 1, locating receivers 10 with identifications);

a **central station** (Fig. 1, computer 4 coupled with location processor 10) in communication with the interrogating station or the central transmitter 6;

a **transponding station** (Fig. 1, tags 4) identifiable by a transponding station identification, the transponding station in communication with both the interrogating station (Fig. 1, central transmitter 6) and the plurality of radio units (Fig. 1, locating receivers 10);

wherein, when said **central station** (Fig. 1, computer 4 coupled with location processor 10) is required to determine a location (col. 10, line 60 to col. 11, line 10, 3D-location of tag 14) of said transponding station (col. 10, line 60 to col. 11, line 10, tag 14),

said central station transmits an enquiry signal to said interrogating station (Fig. 1, central transmitter 6),

said enquiry signal (col. 6, lines 23-27, the central processor routinely contact each tag by tag ID via central transmitter 6 (Fig. 1)) including said transponding station identification (col. 6, lines 23-27, the central processor routinely contact each tag by tag ID); and

wherein said **interrogating station** (Fig. 1, central transmitter 6)

rebroadcasts (Fig. 1, rebroadcast to tags 14) the enquiry signal to said transponding station (Fig. 1, rebroadcast to tags 14).

But Hughes does not specify how wake-up signals are sent to the receivers, but there are only two possibilities. That is, Hughes discloses that computer 4 is sending wake-up signal to locating receivers 10 via central transmitter 8 or to locating receivers 10 via location processor 8 (Figs. 1 and 12b). Furthermore, one skilled in the art recognizes these two possibilities provide same wake-up signals to receivers 10.

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to include interrogating station sends wake-up signal to locating receiver in the device of Hughes because one skilled in the art recognizes such two possibilities provide same wake-up signals to receivers 10.

Regarding claim 12, Hughes teaches the radio system of claim 11, wherein, in response to hearing the transponding station identity in the enquiry signal, said transponding station (Fig. 1, tag 14 transmits to locating receiver 10) transmits a reply signal to said radio units (Fig. Locating receivers 10), the reply signal including the transponding station identification.

Regarding claims 16 and 24, Hughes continues, as disclosed in claims 11 and 19, wherein said transponding station transmits the reply signal at a first frequency (col. 8, lines 53-56, second frequency associated with different frequencies) corresponding substantially to a secondary frequency to which said radio units are tuned (col. 8, lines 53-56, receives the second frequency associated with different frequencies).

Regarding claims 17 and 25, Hughes continues, as disclosed in claims 11 and 19, to teach

wherein the transponding station receives and transmits on a first frequency (col. 8, lines 57-61, alternately same frequency can be used with differing pseudo random sequences); and

wherein said radio units and said interrogating station include frequency changing means (col. 8, lines 53-56, suggests means to change frequencies from first to second frequencies to prevent interference, and thus one skilled in the art recognizes said radio units and said interrogating station includes changing means to prevent possible interference).

Regarding claims 18 and 26, Hughes continues, as claimed in claims 11 and 19, to teach the radio system,

wherein the transponding station is adapted to receive the enquiry signal at a first frequency and to transmit the relay signal at a second frequency (col. 8, lines 53-56, central transmitter and tag transmitter transmit on different frequencies suggests presence of the first frequency and the second frequency to prevent frequency interference; col. 9, lines 11-20, that is, tag receives the first frequency and transmits the second frequency).

Regarding claim 20, Hughes teaches the method of claim 19, further comprising:

transmitting a reply signal from the transponding station (Fig. 1, tag 14 transmits to locating receiver 10) to the radio units in response to the

transponding station hearing the transponding station identification in the enquiry signal and the radio units receiving the wakeup messages (Fig. 12b, computer sends wake-up signal to location receiver 10), the reply signal including the transponding station identity (Fig. 1, tags 4 identifiable by a transponding station identification).

Claims 13–15, 21–23 and 27–28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hughes in view of Shober (5,952,922).

Regarding claim 13, Hughes continues, as claimed in claims 12, to teach the radio system. But Hughes is silent on wherein in response to receiving the wake-up messages and the reply signal, each radio unit identifies said transponding station from the reply signal and determines a received signal strength of the reply signal.

However, Shober discloses, in the art of locating system, each radio unit identifies said transponding station from the reply signal and determines a received signal strength (col. 9, lines 30–35, signal strength) of the reply signal for the purpose of providing simpler location evaluation.

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to have included in Hughes the features of Shober just discussed above because such signal strength measurement prevents more complex time measurement leading to precise location without unnecessarily increasing process time, thus providing coarse and simplified location evaluation.

Regarding claim 14, Hughes in view of Shober continues, as claimed in claim 13, to teach the radio system,

wherein said radio units and said interrogating station relay the transponding station identification and the determined received signal strengths (Shober–col. 9, lines 30–35, signal strength) of the relay signal together with the set of radio unit identifications to said central station (Hughes–col. 10, line 60 to col. 11, line 10, 3D–location of tag 14 associated with receiver location 10 with IDs and transponder ID).

Regarding claim 15, Hughes in view of Shober continues, as claimed in claim 14, to teach the radio system,

wherein said central station 4 (Hughes–col. 10, line 60 to col. 11, line 10, 3D–location of tag 14 determined with parameters from receiver locations 10 with IDs and transponder or tag ID 14) computes a location of said transponding station relative to the location of each radio unit based on the determined received signal strengths of the relay signal (Shober–col. 9, lines 30–35, signal strength), the set of radio unit identifications and the transponding station identification.

Regarding claim 21, Hughes continues, as claimed in claim 20. But Hughes is silent on each radio unit identifies said transponding station from the reply signal and determines a received signal strength.

However, Shober discloses, in the art of locating system, each radio unit identifies said transponding station from the reply signal and determines a

received signal strength (col. 9, lines 30–35, signal strength) of the reply signal for the purpose of providing simpler location evaluation.

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to have included in Hughes the features of Shober just discussed above because such signal strength measurement prevents more complex time measurement leading to precise location without unnecessarily increasing process time, thus providing coarse and simplified location evaluation.

Regarding claim 22, Hughes in view of Shober continues, as claimed in claim 21, to teach, further comprising:

relaying the transponding station identification and the determined received signal strengths (Shober–col. 9, lines 30–35, signal strength) of the relay signal together with a set of radio unit identifications from the radio units and the interrogating station to the central station 4 (Hughes–col. 10, line 60 to col. 11, line 10, 3D–location of tag 14 determined with parameters from receiver locations 10 with IDs and transponder or tag ID 14).

Regarding claim 23, Hughes in view of Shober continues, as claimed in claim 22, to teach, further comprising:

operating the central station (Hughes–Fig. 1, computer 4 coupled with location processor 10) to compute the location of the transponding station relative to the location of each radio unit based on the transponding station identification and

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the determined received signal strengths (Shober-col. 9, lines 30-35, signal strength) of the relay signal together with the set of radio unit identifications (Hughes-col. 10, line 60 to col. 11, line 10, 3D-location of tag 14 determined with parameters from receiver locations 10 with IDs and transponder or tag ID 14).

All subject matters in claim 27 are discussed above with regards to claims 11 and 13, and therefore rejection of the subject matters expressed in claim 27 are met by references and associated arguments applied to rejection of claims 11 and 13.


All subject matters in claim 28 are discussed above with regards to claim 15, and therefore rejection of the subject matters expressed in claim 28 are met by references and associated arguments applied to rejection of claim 15.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matsuichiro Shimizu whose telephone number is 571-272-3066. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber, can be reached on 571-272-7308. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3068.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703-305-8576).

Matsuichiro Shimizu
October 30, 2006


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